

Mitsubishi Q Ethernet Driver for JMobile

This document contains the information needed to connect the panels to Mitsubishi Q Series controllers using an Ethernet connection to the Ethernet module in the PLC.

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Mitsubishi Q Ethernet Driver

The Mitsubishi Q Ethernet driver for JMobile supports communication with Mitsubishi controllers with integrated Ethernet port and with external Ethernet card (QJ71E71-100).

Settings

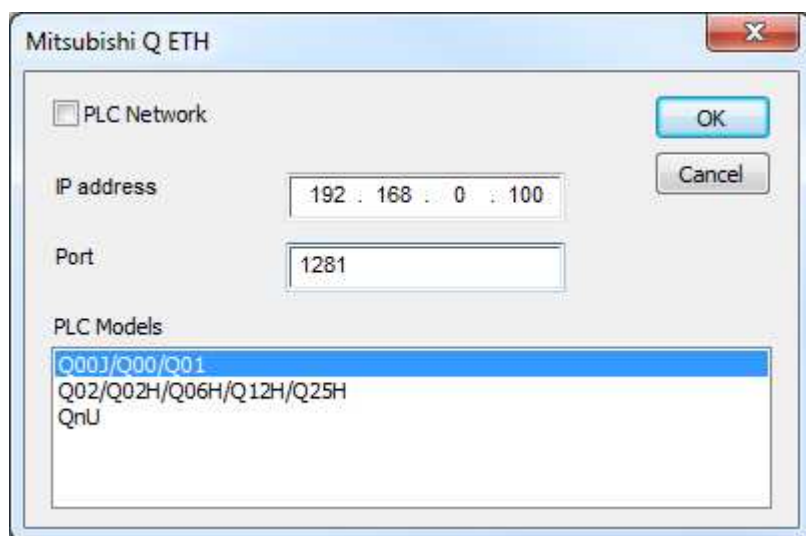


Figure 1

IP address	Ethernet IP address of the controller
Port	Specifies the port number (decimal) used in the communication with the PLC.
PLC Model	Defines the byte order that will be used by the communication driver when sending communication frames to the PLC
PLC Network	The protocol allows the connection of multiple controllers to one operator panel. To set-up multiple connections, check "PLC network" checkbox and enter IP Address for all controllers.

Recommendations for Controller Settings

The Mitsubishi Q system must be properly configured for Ethernet communication using the Mitsubishi GX Developer software version 7 or higher.
The Figure below shows an example of network configuration for Ethernet communication.

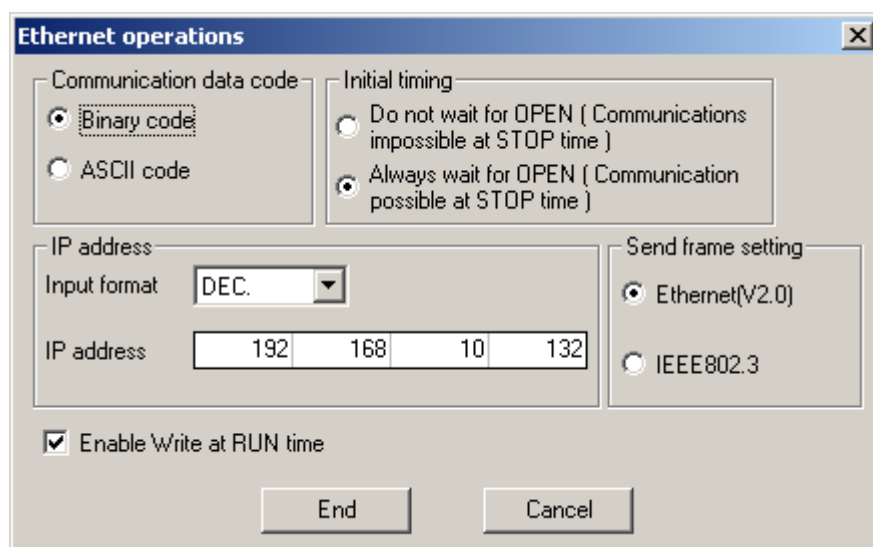


Figure 2

Please note that the UniOP communication protocol supports only Binary code communication.

The PLC system must be configured to accept incoming data from the external device.

In the GX Developer Software open "Parameters", "Network Param" and select Ethernet/ CC IE/ MELSECNET". Add the number of connections of the operator panels you want to configure in the network.

When using the Mitsubishi CPU with external Ethernet card (QJ71E71-100) the connections have to be configured according to the following figure as "Unpassive":

	Protocol	Open system	Fixed buffer	Fixed buffer communication procedure	Pairing open	Existence confirmation	Host station Port No.
1	TCP	Unpassive	Send	Procedure exist	Disable	Confirm	0500
2	TCP	Unpassive	Send	Procedure exist	Disable	Confirm	0501
3	TCP	Unpassive	Send	Procedure exist	Disable	Confirm	0502
4							
5							

Figure 3

When the "Existence confirmation" setting has been set to Confirm, the TCP connection will be closed when it is not used (connection lost); by default the TCP port remains open and it is not possible to reconnect.

Note: The GX Developer software allows entering the conventional representation settings (decimal or hexadecimal) for the port number; in the above figure it is in hexadecimal.

In the next figures there are 2 examples about how to set "Initial settings" for 5 and 15 seconds timeout.

	Setting value	Default value	In units
TCP ULP timer	5	60	X500ms
TCP zero window timer	2	20	X500ms
TCP resend timer	2	20	X500ms
TCP end timer	3	40	X500ms
IP assembly timer	1	10	X500ms
Response monitoring timer	5	60	X500ms
Destination existence confirmation starting interval	8	1200	X500ms
Destination existence confirmation interval timer	2	20	X500ms
Destination existence confirmation resend	1	3	Times

Figure 4 – 5 seconds timeout

	Setting value	Default value	In units
TCP ULP timer	8	60	X500ms
TCP zero window timer	4	20	X500ms
TCP resend timer	4	20	X500ms
TCP end timer	6	40	X500ms
IP assembly timer	2	10	X500ms
Response monitoring timer	8	60	X500ms
Destination existence confirmation starting interval	20	1200	X500ms
Destination existence confirmation interval timer	4	20	X500ms
Destination existence confirmation resend	3	3	Times

Figure 5 – 15 seconds timeout

When using Mitsubishi CPU with integrated Ethernet port the "Open System" settings should be changed to "MC connection"

	Protocol	Open system	TCP connection	Host station port No.	Transmission target device IP address	Transmission target device port No.
1	TCP	MC Protocol		0500		
2	TCP	MC Protocol		0501		
3	TCP	MC Protocol		0502		

Figure 6

Note: The number format for Host Station Port No. is hexadecimal, not decimal.

Communication Status

The current communication status can be displayed using the dedicated system variables. Please refer to the User Manual for further information about available system variables and their use.

The codes supported for this communication driver are:

Error	Notes
NAK	Returned in case the controller replies with a not acknowledge
Timeout	Returned when a request is not replied within the specified timeout period; ensure the controller is connected and properly configured to get network access
Invalid response	The panel did receive from the controller a response, but its format or its contents is not as expected; ensure the data programmed in the project are consistent with the controller resources
General Error	Error cannot be identified; should never be reported; contact technical support